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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,688	10/22/2003	Mikhail Kejzelman	003301-052	4914

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EXAMINER

MAI, NGOCLAN THI

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/689,688	Applicant(s) KEJZELMAN ET AL.	
	Examiner Ngoclan T. Mai	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-27, 29-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-27 and 29-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Upon further consideration, claims are rejected on art of record and previous applied for the reasons as follow.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 18-27, and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueta et al. (2003,0077448, now Ueta) in view of Matsutani et al. (U.S. Patent No. 6,558,565, now Matsutani).

Ueta discloses an iron-based powder composition comprising an iron-based powder coated with a coating containing silicon compound and pigment, wherein the silicon compound can be an alkoxysilane, which includes decyltrimethoxysilane and decyltriethoxysilane, see paragraph [0021], [0080] – [0081]. Ueta et al thus teach silane having the alkyl group of 10 carbon atoms. Ueta discloses using iron-based powder having a large particle diameter preferably more than 100 microns when a core having a high permeability, high magnetic flux density and remarkably reduced hysteresis loss is desired, [0101]. While Ueta does not particularly teach employing alkylalkoxy silane wherein the alkyl group of the alkylalkoxy silane having 8 to 30 carbon atoms and the alloy group includes 1-3 carbon atom, however it would have been obvious to one of ordinary skill in the art to select any alkylalkoxy silane disclosed by the reference, including the claimed alkylalkoxy silane, from the broader range disclosed in the reference because the reference finds that the alkylalkoxy silane in the entire disclosed range has a suitable utility. --- Note: Even if a reference teaches a preferred range within a broader range, it still does not "teach away" from the claimed invention. See MPEP 2123. Since the iron based powder composition taught by Ueta contains the claimed silicon compound, the silicon compound is expected to impart lubricability to the iron-base powder. Note that since 100 microns size is preferred, there is no powder having particle size below 45 microns. As for the recitation of up to 1% by weight of graphite, Ueta teaches employing Fe powder having about 0.2 or less carbon, [0091]. Note that graphite is a source of carbon. Thus it would have been obvious to substitute graphite as the carbon source in the iron powder of Ueta.

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As for claim 20, while Ueta does not teach octyl-tri-methoxy silane, Ueta exemplifies alkylalkoxy silane having alkyl group of 6 and 10 carbon atoms, see [0081]. Thus it is reasonably expected that alkyl group of alkylalkoxy silane having 8 carbon atoms would also be useful for coating iron based powder. Therefore selecting alkyl group having 8 carbon atoms would have been obvious in view of the teaching of the reference.

As for claims 21-23, Ueta teaches the total amount of the coating is from 0.01 to 25% by mass relative to the total amount of the iron based powder and the ratio of silicon compound to pigment is from 0.01 to 4.0, see [0023]. Since Ueta teaches composition iron based composition with silicon compound whose wt% ranges overlap those recited by the claims; such overlapping range renders applicant's composition prima facie obvious despite difference in non-overlapping areas, see *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). Furthermore, in view of the overlapping in composition, the composition taught by the prior art would be expected to possess the same properties of applicant's claimed composition. See *In re Best*, 195 USPQ 430. To distinguish over prior art, applicant needs to demonstrate (e.g. by comparative test data) that the more narrowly claimed ranges for the alloying constituents are somehow critical and productive of new and unexpected results.

Regarding claims 24-25, Ueta discloses powder having the claimed particle sizes in Table 1, powder-containing iron, No. e.

Regarding claims 26-27, while Ueta does not specifically teach at least 40% and at least 60% of the iron-based powder consists of particle having a particle size above about 212 microns, Ueta teaches that particles having more than 100 microns in size are desired when a core having a high permeability, high magnetic flux density and remarkably reduced hysteresis loss is desired. Determination of an optimum or preferred particle size and appropriate amount of powder having that particle size to obtain magnetic of desired properties is within the skill in the art and therefore would have been obvious.

As for claims 29 and 30, Ueta teaches the claimed limitations in [0092]-[0094].

As for claim 31, Ueta teaches forming powder core by compacting iron-based powder composition comprising providing an iron-based powder coated with a coating containing silicon

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compound and compacting the powder at pressing pressure of 980 MPa [0174]. While there is no teaching of ejection the core after compaction, such is inherently performed since it must be taken out of the compacting machine for further processing or use. The difference between the claim and Ueta is that Ueta does not teach uniaxial compacting the powder composition in a die.


Matsutani taught in the same field of endeavor discloses making core pieces from composite magnetic material by uniaxially pressing the composite magnetic material at a pressure of 10 t/cm² (980 MPa), see col. 8, lines 15-19.

Since Matsutani discloses employing uniaxially pressing can be used to make core piece Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ known pressing technique for pressing the iron-base powder composition taught by Ueta et al.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Ngoclan T. Mai
Primary Examiner
Art Unit 1742

n.m.